Hobbies WEEKLY

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CONTENTS

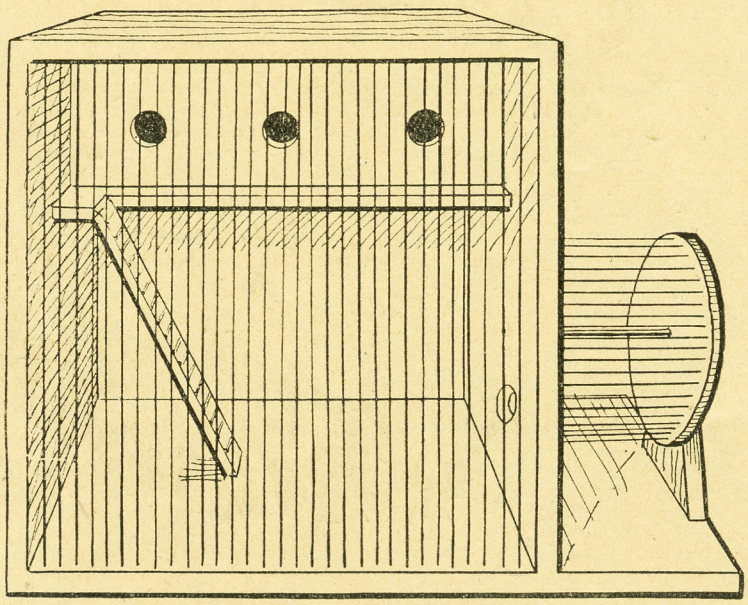


# A CAGE FOR TAME MICE

READERS who find an interest in breeding fancy mice will find the cage (illustrated) a useful one. It is reasonably commodious in size, and easy to keep clean, also it is provided with a treadmill for the mice to exercise in, most amusing to watch. Some necessary measurements are included, mostly for use if the cage is made up from boards, but quite a good one can be constructed from a deal box approximating to the sizes given. The wood used need not be heavy, a thickness of ½in. would be just about right.

### Simple Construction

Fig. 1 shows a front view of the cage, and Fig. 2 a side section. Construction is simple enough, as no difficult joints are involved anywhere. Make up the sides, top, and bottom, first, then nail them strongly together.



It will be noticed that the bottom extends over one side just 4½ins. to provide a base for the support of the treadmill.

Cut the shelf, A, from wood 6ins. wide, and reduce it to 5ins. in width for the major portion of its length, so leaving a space at one end to provide a short landing at the top of the ladder, as shown in the general view.

To this shelf the front board of the nest boxes is nailed. This board is divided into three equal parts and in the centre of each part, at 2ins. up, a 1in. hole is bored through to admit the mice into their sleeping chambers. Divisional pieces of wood are then cut to size and nailed to the front and shelf to separate the boxes.

### Fitting the Unit

The whole arrangement is now nailed in the box, allowing enough space at the rear for the back of the cage to enter. Cut the back into three pieces, lengthwise, one 4ins. wide, to cover the nest boxes; one 2ins. wide, for a hinge strip; and the remaining part 6ins. wide, to cover the bottom part. The hinge strip is nailed across both to the shelf and sides, and is stiffened at each end with a triangular piece, as at B, glued in.

The top and bottom parts of the back of the cage are now hinged to open, as in the sectional view, Fig. 2, and small wood or metal buttons fixed to keep them shut up securely, as in detail sketch, Fig. 3.

The treadmill can be constructed and fitted up. This is seen in the front view of the cage, Fig. 1. A support for the mill is made from a piece of the wood, C, Fig. 4. Cut it to size and shape shown, with a 2in. wide tenon at the bottom. A small hole is bored through, near the top, for the spindle on which the treadmill turns. It should be a tight fit for the spindle—a short length of stiff steel, such as a piece of knitting needle.

At the extending end of the bottom of the cage cut a strip of wood out to admit the tenon of the support, and glue and screw the latter in place. In the end of the cage facing it, bore a similar hole for the spindle and below this a 1in. hole for the mice to enter the treadmill, as in Fig. 2. These holes, by the way, are more conveniently bored in the end piece before the parts of the box are nailed together.

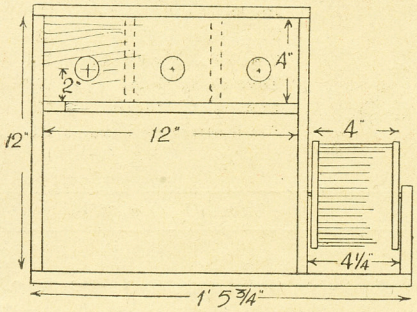


*Fig. 1—Front view with dimensions*

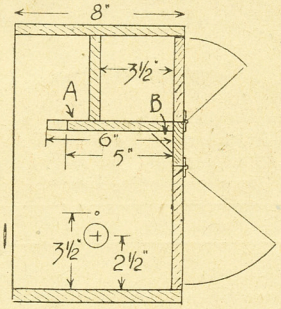


*Fig. 2—A side section*

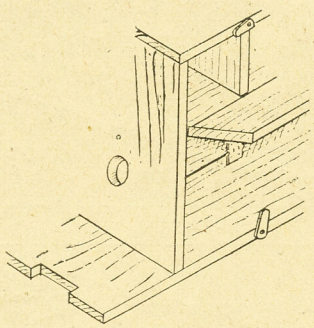


*Fig. 3—Constructional details*

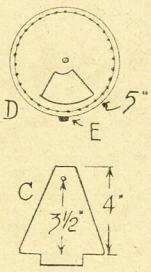


*Fig. 4—Wheel and support*

The ends of the treadmill, D, Fig. 4, are best cut out from a piece of three-ply, if at all possible, otherwise ordinary fretwood must suffice. Cut them to the diameter given, bore them centrally for the spindle, an easy fit, and in one only cut out an opening, as shown, for the mice to enter. On a pencilled circle 3/16in. from the edges, drill a ring of fine holes for the wire sides of the mill. Ordinary birdcage wire will suit for these, and the holes should be a tight fit for the wires.

Cut the wires 4ins. long and push them through the holes. Do this carefully and avoid bending the wires in the process. Given tight holes, the completed treadmill should be firm enough.

It is necessary to ensure that the treadmill should always come to rest with the opening opposite the entry opening in the side of the cage, and for this reason a small piece of lead should be fastened to the treadmill at the spot marked E. Now fit the treadmill in place with the spindle. It should turn quite easily, and will not tend to scrape the side of the cage if a thin metal washer is placed each side, over the spindle.

The ladder, by which the mice climb to their nesting boxes, is just a 1in. wide strip of wood. A few narrow strips are glued across it to help the mice climb up, then the ladder is fixed in place with glue and a small nail or two. No separate drawing of this part is provided, as it is quite simple and can be clearly seen in the general view of the cage.

### Front Wiring

The front of the cage should now be wired in. The sizes given will admit a stock size of wire front such as bird shops generally sell. If this is not available, then get a supply of bird cage wire in straight lengths, and bore a row of holes ¼in. from the front edges of both top and bottom of the cage, then push the wires through. Space these wires, both in the cage and treadmill, at 5/16in. apart.

This completes the cage. It is best to paint it outside and to distemper the inside, unless you can buy a non-poisonous paint for the interior, such as can be bought for birdcages, and use that. Leave it a little for the smell to fade away, before using.

# From the Editor's Notebook—

THE children of Public Homes and Hospitals at Portsmouth have cause to be grateful to Mr. C. Goodall, of Church Path for his efforts with his Gem fretmachine. He made over 1,200 toys during the war, as well as 3,000 animal splints for the Peoples Dispensary for Sick Animals. Indeed his machine had become worn out, but as a result of a note in a local newspaper, a great-hearted gentleman brought along another, with the hope that the good work might continue. We add our best wishes, too, to this keen worker, 71 years of age, but young and enthusiastic in spirit.

* * *

AN enthusiastic reader in Argentina, South America, is anxious to obtain some inlay designs which were published before the war. He is in the fortunate position of having the various colours in natural wood—lucky fellow—and has already completed several. He wants Nos. 1446, 1742, 1941, 2000, 2041, and 2042, as well as the designs of the Coronation Coach (203 Special), The Taj Mahal (No. 202 Special), and St. Paul's Cathedral (No. 187 Special). Readers who have these designs should write direct to Stuart G. Sly, Plaza 2814, 2 Piso "K", Buenos Aires, Argentina, South America. He says he will pay 1/- each for the inlay designs and 2/- each for the others if in good condition.

* * *

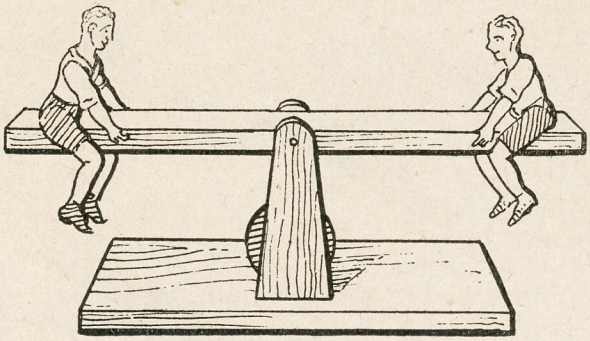
I AM glad to find how extensive is becoming the practise of hobbies in hospitals and orthopædic institutions—particularly where T.B. and other long-term treatment is necessary. Hospital life can become very boring without some interest, and most patients delight to find a pastime to enjoy during their illness. I know of several go-ahead places where men, women and children are given a chance to take up a hobby—and indeed where it has sometimes led to starting business on those lines when they have come out. Among the most popular of the practical hobbies are Perspex work, and general plastic work, toy making, leatherwork, embroidery, knitting, rug making, clay modelling, all of which can be undertaken whilst still in bed, and continued with even more interest as an "up-patient".

* * *

WILL readers who seek advice always put their address in the letter, please? Some omit it and suggest publishing the reply in Hobbies Weekly. That is all very well, but I have not room to put all these replies in our pages, and the question may not even be of sufficient general interest to warrant insertion. It may be a long while, in any case, before such reply could appear, so for your own sake, as well as mine, do put your name and address on any correspondence.

**The Editor**

# A weighted pendulum makes this toy a continuous ROCKING SEE-SAW



AN interesting though simple toy this, just the thing to make for a young child. It can be made up from any small pieces of wood available, and will amuse a kiddie. There is nothing in it to get out of order, the motive power being a lead weight which will cause the seesaw to work for a short while on the same principle as the common pendulum.

The parts of the seesaw, minus the figures and weight, are shown grouped together in Fig. 1, the base, seesaw itself, and the supports between which the seesaw rocks. The base can be cut from a piece of deal or just common box wood about ½in. thick.

Across the centre saw out the two mortise slots shown in the diagram, to suit the thickness of wood used for making the supports. Give the base a good rub over with glass-paper and leave it smooth. Take care no splintery edges are left. This specially applies when the soft loose-grained wood, often used for boxes, is employed.

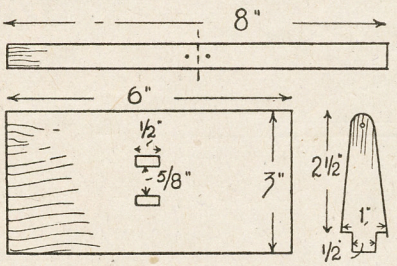



Fig. 1—Main parts of the article

### Supports

The supports can be cut from thinner wood, if available, ⅜in. for example, or from scraps of fretwood if any are about. Cut them to length given, plus enough for the tenons at the bottom. They are ½in. long and as deep as the wood is thick from which the base is cut.

Taper them a little towards the top, and at ¼in. down bore a hole through for the nail to go through, which acts as a pivot for the seesaw to rock on. Glue these supports in the base and when the glue is hard, give the whole a coat of paint, some bright pleasing colour, to make it look smart and attractive to a child's eye.

The seesaw, shown above the base in the diagram, is cut to the length and width given from a piece of wood ⅜in. thick. Having smoothed it with glasspaper, mark the centre of its length on its edges, and there bore a hole right through for the pivot nail to enter.

It will be as well to bore this hole from both edges, going half-way through each side. This will better ensure the hole being at true right-angles to the length. Make it an easy fit for the pivot nail. This, by the way, can be a 1½in. round wire nail, with the head filed off.

### Pendulum

On either side of this hole, and at right angles to it, bore a small hole through the seesaw. The distance between these holes can be ½in. and they should be a tight fit for the gauge of wire used for the weighted pendulum, now to be described.

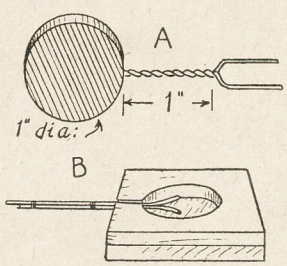



Fig. 2—The pendulum

The complete pendulum is shown at A in Fig. 2. For the wire cut two lengths of stout wire about 4ins. long each and bind together, temporarily, with a strong thread or thin wire. A mould in which to cast the weight must now be made.

This is the simplest of jobs, the mould simply consisting of two scraps of ½in. wood (one with a 1in. diameter hole bored through it), nailed together. In one side make a saw kerf to half the depth of the mould, as at B, for the wires to lie in. About ½in. of the ends of the wire are bent outwards, as in the diagram, and then the wires are pressed in the saw kerf, and any remaining space in the kerf filled up by pressing a match-stick in the space.

Now, in an empty tin, place a few scraps of lead and melt over the fire or on a gas stove. When molten, grip the tin firmly with pliers and pour the lead carefully in the mould. It will set in a minute or two and can then be removed from the mould. Let it cool, then file it smooth, if necessary, of course.

The wires sticking out of the cast are twisted for 1in. in length, no more, then the remainder bent to make a fork, as shown at A, the prongs of which should suit the distance between the holes bored in the seesaw. Press well in, and bend over inwards at the top of the seesaw, to make a secure joint.

Now test the seesaw in position. If the nail is a good fit in the supports and a loose easy fit in the seesaw, the latter should rock for quite a while. The figures can now be made to finish the whole work.

### The Figures

The parts for these are drawn over ½in. squares in Fig. 3. Note that arms and legs for each figure are similarly lettered to prevent mistakes. The body parts are traced through carbon paper on to soft wood ½in. thick, and should be cut carefully out with a fretsaw.

These parts should be shaped up a little, and finished to the best of the reader's ability in that matter. A lot can be done with judicious whittling with a penknife. Be careful to leave those parts of the figures to which the arms and legs are to be glued, quite flat.

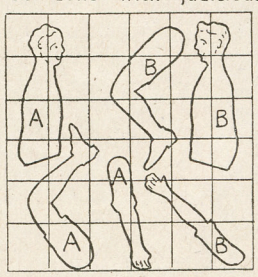



Fig. 3—Figure parts

Cut two of each of the arms and legs, from thin fretwood, ⅛in. stuff if at all possible. Fix the body parts to the seesaw with glue, and a single thin screw, driven through the seesaw from underneath.

The arms and legs are now trimmed up with a file, the edges being rounded off on their outsides, not the sides facing the figures. Fix them to the body parts with glue and a small fretwork nail, which should make a secure fixing enough.

The figures can now be painted, and the details of features and clothes carefully defined with a small brush. The seesaw itself can be painted or left plain as preferred. Give the pendulum wire a coat of paint to complete and you will then have a novel and attractive toy.

It will pay the keen amateur to make for himself a

# RADIO COIL WINDER

BECAUSE efficient coils can be made quite easily, the constructor of the simpler types of radio receiver usually winds his own. About eighty to one hundred turns are used for Medium Waves, and two hundred or so for Long Waves (depending upon the diameter of the former, etc.). Such winding can be done by hand, but if a simple machine is used the turns can be placed more evenly. The job can also be done in less time; it is less trouble and there is no danger of getting the wire into loops, or otherwise tangling it.

Such a winder is, therefore, worth making. With transformers and similar parts requiring a large number of turns, it will save a lot of time and trouble, and the results will be much more even.

### Cutting the Parts

A piece of wood about 6ins. by 10ins. and ⅜in. thick forms the base. Two strips 2½ins. by 1in. by ⅜in. support the axle on which the spool of wire is placed, and two pieces about 2½ins. by 2½ins. by ⅜in. hold the winding axle. Pieces are sawn out of the base so that these four pieces fit flush. They are screwed on in the positions shown in the illustrations.

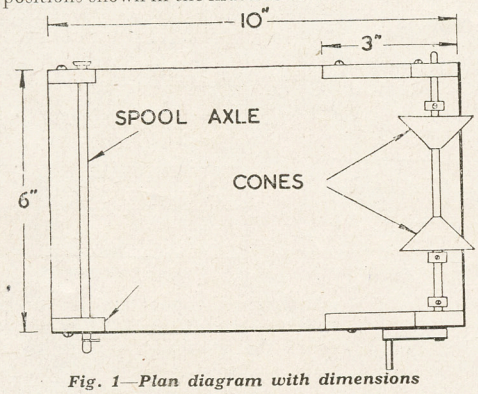



*Fig. 1—Plan diagram with dimensions*

Two axles are now required. The one which runs through the smaller uprights only serves as a convenient mounting upon which the reel of wire can be placed to unwind. Wood or any metal spindle can be used. One end has a washer glued or soldered on, as the case may be. The other end is notched so that a clip can be slipped on. The axle can, therefore, be withdrawn and replaced to hold the various reels of wire used.

### Cones and Winder

For the second axle, metal is best, and three collars with screws are needed to fit on it. However, these parts can be bought for a few pence. It is also possible to make collars from small blocks of hard wood. One hole should be drilled for the axle, and another smaller hole at right-angles for a moderately large wood-screw. The screw can be tightened up against the axle, undue force being unnecessary.

### Making Cones

The former or tube being wound is placed between two cones. These assure the tube will be held centrally and level, and any size tube up to the full diameter of the cones can be held in the correct position without trouble.

Failing a lathe, the cones can be made as follows. Take a piece of wood about 2ins. in diameter and 2ins. long and drill it down the centre so that it is a push fit on the axle. Fix it on the axle and hold the axle in the chuck of an ordinary geared drill. The drill can then be gripped in a vice, and if someone turns the handle the cones can be cut with a sharp chisel. As a result they will be quite true and even. If the degree of taper is different that does not matter. An angle of about 45 degrees is convenient.

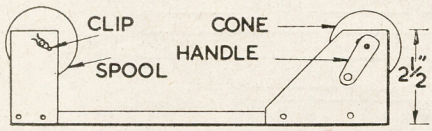



*Fig. 2—Side view of winder*

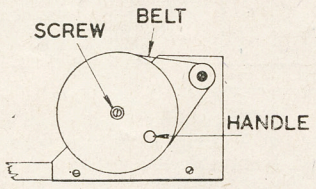
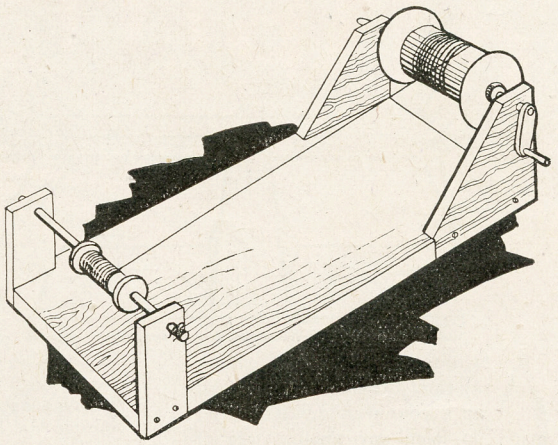



*Fig. 3—A simple high-speed job*

After finishing, the cones are removed from the axle and parted by sawing. The winding handle is about 1½ins. long, and is cut from wood or metal. It is fixed permanently to the axle.

### Using the Winder

When winding a coil, etc., the spool of wire is placed on the spool axle, where it will turn freely. The end of the wire is then anchored to the former by passing it through a pair of small holes. Now loosen the three collars and place the former between the cones. Tighten up the collar near the handle to prevent undue side play.



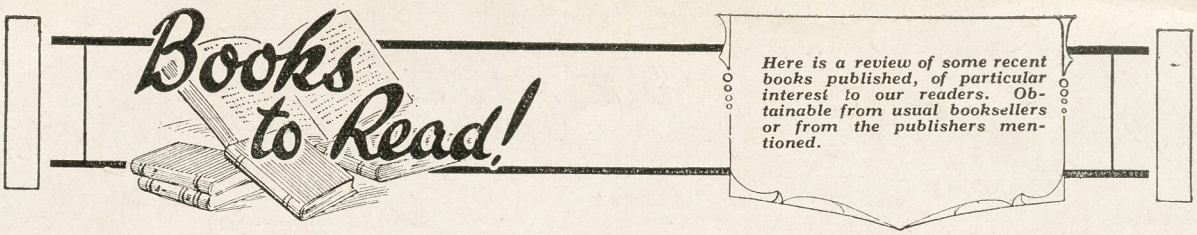
The cones are then pressed together against the former, which will make it lie centrally, and the two remaining collars tightened up to hold them in place. Friction between collars, cones and former will rotate the latter as the handle is turned. The wire is guided by the left hand. It will be found that it is easy to count the turns correctly and to get them even and tight.

### High Speed Winder

For transformers, etc., the winder shown in Fig. 3 is recommended. The handle is replaced by a small wheel and a large wheel is pivoted on one side member. A strong elastic band will do for the belt, because with such components very fine wire is used and the tension will be slight.

Wheels can be made from wood if no metal ones are available. Washers under the pivot screw will make the action smooth.

If one wheel is 2½ins. in diameter and the other ½in., this will give a ratio of five to one. If a component requires one thousand turns, it will, therefore, only be necessary to count two hundred turns on the handle, which will only take two or three minutes. With thin wires, take care the spool can rotate freely, and only apply a slight tension to the wire as it is guided through the fingers of the left hand.




*Here is a review of some recent books published, of particular interest to our readers. Obtainable from usual booksellers or from the publishers mentioned.*

## Be Clever with Plastics

by C. W. Read

THE increasing popularity of plastics as a pastime is shown by the interest of our readers in the articles we have in these pages from time to time. Those who followed our series for the beginner—as well as those who have already commenced will find this new handy pocket-size manual most useful. It is compact, written in simple language and profusely illustrated. Apart from a short interesting chapter on the industrial processes the book is divided into two sections—how to undertake the work, and examples of work which can be undertaken. There are literally dozens of practical and ornamental articles to make, including many suggestions for everyday gadgets such as handles for handleless cups, clothes pegs, picture hooks, match holders etc. When you become experienced you can pass to the wide range of attractively useful articles, table lights, jewellery, chessmen, lamp holders, desk accessories, cigarette holders, etc. Altogether a very satisfactory book for the worker in this new and fascinating art.

*(Published by Bear Hudson Ltd., 63 Goldhawk Road, London, W.12—Price 2/6.*

* * *

## Introduction to Television

by A. Folwell

THIS concise and practical book covers technical explanations suitable for any reader with a fairly comprehensive knowledge of broadcasting who wishes to know more about the equipment and science of television. The pages deal with the system in use by the B.B.C. and cover not only the receiver itself, but the all important question of aerial. The book is clearly written and well illustrated, and should be of much use to technical staffs and radio engineers who want to be *au fait* with latest developments.

*Published by Messrs. Chapman & Hall, 37 Essex Street, London, W.C.2.—Price 9/6.*

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## How and Why it Works

DO you ever wonder about how a cinema organ really works, or what would happen if and when you pulled a train communication cord, what causes the automatic operation of the traffic lights ? There are over one hundred such subjects in this amazingly interesting book. Its 320 pages deal in picture, diagram and letterpress with those things we meet every day, and explains the intricate processes and the cause and effect in simple everyday language. We are so apt to take for granted apparatus and operations which are really a marvel of scientific ingenuity, that such a book as this is a revelation of what goes on behind the scenes. In keeping with the high standards of Odhams Press publications the book is well printed and bound, with large type, clear illustrations and pictorial diagrams which explain, almost without thought, all kinds of operations and processes. It would be impossible, we imagine, to find a reader of Hobbies—or any of his family, or friends — who would not be fascinated by the interest every page contains.

*Published by Book Dept., Odhams Press Ltd., 67/8 Long Acre, London, W.C.2—Price 9/6.*

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## Figures in Action

by Charles Wood

IF you have an aptitude for drawing, and already some knowledge, this little pocket-sized book will undoubtedly carry you several steps further. There is little letterpress matter to weary you, but the line illustrations are a joy and an incentive which few will be able to resist. All sorts of actions or part actions are shown with minimum strokes of the pencil, and accompanying letterpress mentions the points to stress, to soften and so on. Apart from the actual figure work there is an interesting portion and examples dealing with composition and how much improvement can be obtained from a dramatic sense as a background. This second book by Mr. Wood should certainly be as popular as was his first which we reviewed in these pages some time ago.

*Published by The Studio Ltd., 66 Chandos Place, London, W.C.2—Price 3/-*

### GLASS DRILLING

***I have made several table lamps from odd shaped bottles as mentioned in Hobbies Weekly recently and found the best way of boring a hole is to drill with a broken drill. After drilling a short time, this becomes blunt, but sand can be sprinkled into the hole while drilling.***

***(A.W.H.—Bexley Heath)***

## World of Living Things

by Kenneth Sparrow

HOW little do we realize what goes on in the world of the undergrowth, as we enjoy a walk in the country or a stroll in the park! The little animals and insects under tree and bush, the tiny inhabitants of the pond or river all going about their lawful occasions with that quiet endless bustle of instinct and heredity found in nature. What an interesting study of biology there is to be found if one knows how to understand it. This book, written by a regular "Nature" broadcaster, and illustrated by fine pictures by Harold Bastin, the nature photographer describes the world of living things—feeding, growth, habits, characteristics, etc. of animals and plants we all know—or could know if we cared. The book should appeal to young and old, for its interest is in everyday things, about which we lamentably know so little.

*Published by Vawser and Wiles Ltd., 555 Lea Bridge Road, London, E.10—Price 7/6.*

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## Writing and Photography

by F.R.U.

THE author of this little paper-covered book, is a frequent contributor to these pages, so his knowledge of free lance journalism is practical and experienced. Readers who have an urge to "write" should certainly read it, because it prevents the submission of articles to editors which they can immediately tell to be amateur and untrained. Being able to do something correctly and to be able to write an explanation of it lucidly are two different matters. There is as much to learn in the art of writing as in anything else. This book gives a well-arranged series of information on both writing and illustration, covering those practical points so helpful in compiling, arranging, offering and selling plain literary work or that with the added virtue of photographic illustration.

*Published by L. Warner, Middlefield Lane, Hinckley, Leics.—Price 2/6.*

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## Weaving for Amateurs

by Helen Coates

FROM the number of letters we receive on the subject there are apparently a large number of readers interested in home weaving—who

*(Continued foot of page 122)*

# Some more suggestions for making useful THINGS FROM TINS

SOME of the tins now made to hold food stuffs are finished off with neat roll edges, and lend themselves quite well to making useful articles for workshop and home. Two such ideas are illustrated, one a nail box, and the other a fancy vase-like holder, suitable as a container for spills, pipe cleaners or tapers, or for displaying dried grasses or artificial flowers.

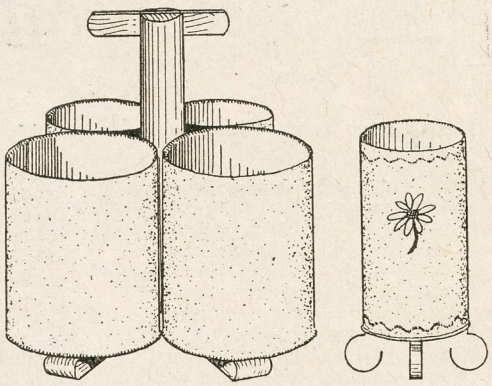
### Suitable Container

About the best tin for the latter article is a coffee tin, ½lb. size, though other tins of similar shape could, doubtlessly, be used as well. The tin needs to be cleaned out, of course, then provided with a metal base as a stand. For this, cut two strips of metal ⅜in. wide and 9ins. long. If you can use brass or copper, all the better, but tinplate strips can be employed if nothing stronger is to be found.

Punch a hole in the centre of each strip to admit a ⅛in. brass screw bolt, complete with a nut and washer. The holes should have the burrs made by the punching filed away. Bend the strips as at A, in Fig. 1, making the circular or near circular ends rather just 1in. diameter. The two strips are then to be laid at rightangles to each other and fixed together and to the tin at the bottom with the bolt and nut, as shown.

Before this can be done, however, a hole for the bolt must also be punched through the centre of the bottom of the tin. This hole should be punched through from the inside, with the tin resting on the top end of a piece of wood, held between the knees. For better fitting of the stand strips, it is as well to ensure the hole being as truly in the centre of the tin as possible.

This can be more easily done if a circle, a shade less than the diameter of the tin, be struck with compasses on a piece of thin card, cut out and pressed down the tin to lie flat on the bottom, as at B. The point made by the compasses will show the centre and allow the hole to be punched with reasonable accuracy.



### Painting

The vase can be finished with a coat of any of the art enamels, and if a simple border and flower ornament can be added, a pleasing article will result.

For the nail box, choose four of the 1lb. tins used for jams, the kind which are closed with cardboard or metal covers, as the edges are then finished nicely with a roll edge. From any pieces of deal at hand cut two strips as at C, in Fig. 2, say, 1in. wide, and groove them at their centres so that they notch together with a halved joint. In one only, the top one, cut out a small mortise slot ⅜in. or ½in. square.

### The Handle

For the handle, D, a piece of broomstick can be employed or a length of wood 1in. square instead. At one end cut a stub tenon to fit the mortise in the stand strips, and at the top end, cut a slot out to just admit the wood grip, E, a piece of ¼in. fretwood, ½in. wide, or other thinner piece of wood available.

Glue this in the slot in the handle, and drive a nail through the joint to strengthen. Now fix the handle to the stand strips with glue and a single screw driven in from underneath the stand.

The tins have a hole punched in the centres of their bottoms, as done in diagram B, and are fixed to the stand with a single round-headed screw each. The ends of the stand can be nicely rounded off and all be painted or enamelled. This will hold quite a quantity of nails and be invaluable in the home or workshop. You can make it more attractive and prevent rust by painting if desired.

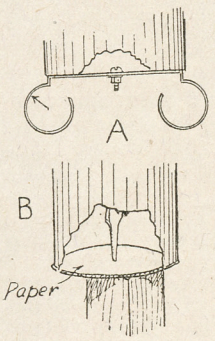



Fig. 1—Details of construction

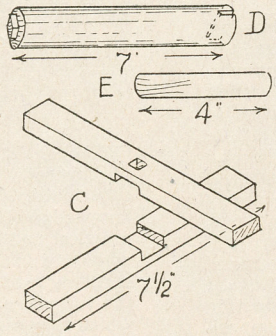



Fig. 2—Base and handle parts

**Books to Read**—(*Continued from page* 121)

would like to construct their own loom or spinning wheel and undertake the creation of useful and beautiful fabric. Although probably one of the oldest of mankind's occupations weaving has still a fascination for people who feel the need to be practical with their hands and create for themselves—and their friends—something beyond the multiple article produced by mass production. Miss Coates whets the appetite with photographs of beautiful articles made by expert amateurs, but at the same time gives opportunity to the beginner by providing instructions for various home-made looms. Progress is shown from simple hand-looms to large pedal looms able to undertake an amazing variety of work. The contents also deals with fabrics, dyeing, spinning, varieties of weaving, etc., so the reader who follows its pages may easily become expert in his (or her) ability and the possessor of a pleasing and practical pastime.

*Published by The Studio Ltd., 66 Chandos Place, London, W.C.1,—Price 10/6.*

* * *

## Colour-Paper Decoration

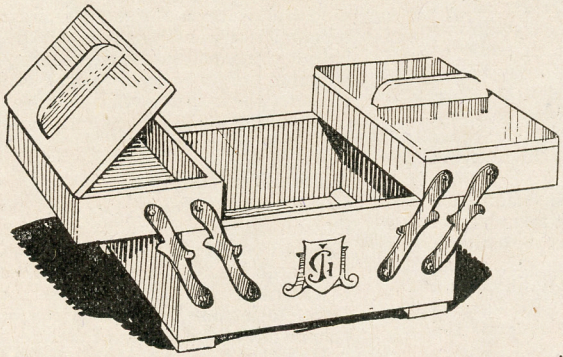
by Frederick T. Day

THE use of nimble fingers with coloured paper, scissors, gum and card can provide a pleasing quiet occupation for those who seek to combine artistic ability with practical results. Mr. Day has produced a worth-while book on the subject, and the illustrated results of his own ability should entice many more to take up the art. It is a creative hobby particularly suitable for youth groups and clubs of a similar character where co-operative suggestion and help can go hand in hand with creative ideas and practical knowledge. Really beautiful and colourful results can be attained by the judicious use of coloured paper. Chapters deal with the tools and materials needed, how to build up designs, the question of colours, parchment work, table and wall decorations, home and office decoration etc., and a complete index gives ready reference to any particular point needed.

*Published by Book Dept., C. Arthur Pearson Ltd., Southampton Street, London, W.C.2—Price 7/6.*

## A delightful gift for a lady is this novelty

# FOLDING WORKBOX



HERE is a type of needlework box both interesting, useful and compact. There is a handy size box, hinged to the top, of which are two trays for cottons, silks, threads and the many little gadgets which make up the kit of the busy housewife. Such an article as this would make a splendid Christmas or Birthday gift.

The front view of the box is given in Fig. 1, and shows one of the top compartments or trays closed over the left half of the box, while the right hand tray is thrown open or folded back, giving access to the large compartment below. The system of hinging the trays to the lower box is interesting and works on the old principle of the parallel rules used in the drawing of a number of straight and parallel lines on paper.

### Box Sizes

The box measures 12½ins. long, 8½ins. wide and 5ins. high. It consists of a floor, A, Fig. 2, two sides, B, and two ends, C, all of ⅜in. stuff. To make a really satisfactory and strong job, the corners of the box should be pin-jointed together as shown, and glued, with angle fillets, such as D, put along on the floor and ends to hold the floor firmly in place.

The floor fits between the sides and ends as seen in the sectional diagram, Fig. 2. Where a floor fits into a frame such as in this case, it is always better to mark out the outline of the floor direct from the frame, which ensures a perfect fit.

It would not do, therefore, to cut the floor first and, having knocked the pin-jointed frame together, expect anything of a perfect fit. It will, however, be very necessary to check the inside angles of the frame for squareness with the tri square or a set square after gluing the parts together.

If the worker should not use the pin-joint method for the angles of the box, but simply butt and glue them together, then the joints and angles must be strengthened by the addition of angle fillets wherever possible.

### Tray Construction

The construction of the trays is shown again in Fig. 2, and the sizes of the rails, F and G, which are all 1¾ins. wide, are given in this diagram, the rails, F, going in between the rails, G, will be 8ins. long, as all the wood for the trays is ¼in. thick. Here again the floor, H, goes in between the rails, F and G, and is held by the angle fillets, H.

The lids for the trays are cut to the exact outline of the frame and cleaned down evenly all round. They consist of a single piece of wood, and the plain handles running across the top, help to stiffen them materially when glued and screwed on from beneath.

The handles measure 5½ins. by ¾in. by ⅜in. thick. Shallow recesses are cut to receive the hinges as seen in the detail. These may be cut down with the fretsaw to the depth of the two flaps of the hinges and then cleaned out with a sharp pocket knife or chisel. Two pairs of stout ¾in. brass hinges should be obtained for the job.

The trays are attached to the box by four pairs of bars made from stout brass and put on with roundhead screws. The outline of one of the bars is given in Fig. 3, and from this the enlargement can be made on to paper, following carefully the squares which measure ½in. longways by ⅝in. across the width. Set out these divisions, then follow the outline through each. One half, lengthways only of the design may be done if desired, traced off and transferred to the other side of the centre line, making the complete outline.

### Hinging Pieces

Stout brass large enough to take the eight outlines must be obtained and the paper patterns gummed down to it and cut round with a metal-cutting fretsaw. It should be borne in mind to drill the holes before cutting the strips to outline so they remain perfectly flat and even throughout their length. Some little care must be exercised in the placing of the strips on the box and the trays.

First, taking in hand the trays, run a line in pencil centrally—that is ⅜in. up from the bottom line along the sides, see dotted line in Fig. 1. Then set out 1in. and 2ins. from the inner upright edges of the tray as shown and prick in holes in the wood at these points.

Next, taking in hand the box, set down 3ins. from the top edge and draw a line extending to the edge, then from the latter set in again the 1in. and 2ins. distances on this line and prick in again on the line. Thus the positions for all the screws should have been accurately detailed.

### Trial Fitting

It would be advisable to make a trial with, say, a pair of the strips at first before actually driving home the screws to make quite certain that the trays meet evenly and correctly centred with the box top edge. When all is well, run in the round head screws, putting thin brass washers between the strips and the sides of the box and trays.

Four feet cut from the ⅜in. or ¼in. waste wood glued and nailed on make for a good finish to the box and these may be stained black to give contrast to the other colouring.

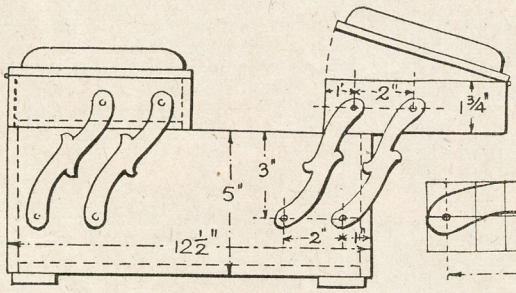



*Fig. 1—Side elevation*

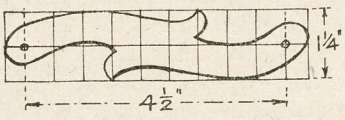



*Fig. 3—Shape of brass hinges*

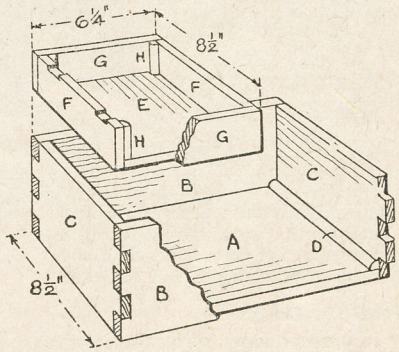
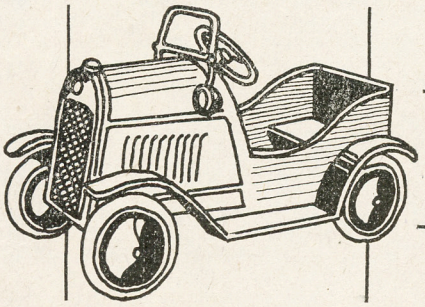



*Fig. 2—Constructional detai of boxes*

# General Notes on making some popular large
# TOYS FOR XMAS

XMAS toys, which are normal toys, are generally easy to construct, but some are really impossible, especially pedal motor cars and pedal tricycles. We show, for example, a small car which, in appearance, looks very simple to make. The construction is simple, but only to the man with the materials, tools, and the experience.

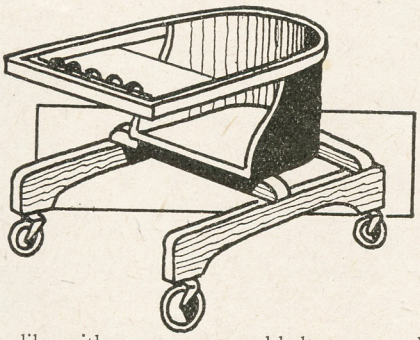
The specification of this model is: an all steel body, touring type; drive by crank and pedals; large 8in. rubber tyred disc wheels; nickel-plated radiator; rubber pedals; complete with



windscreen, side lamps, mudguards and step. Enamelled in smart colours. Overall size: 32ins. by 17ins.

It is always the same story. The best of toys are manufactured almost entirely from metal. The most the home worker can do is to try and copy such toys by using wood and a few odds and ends of metal.

This is usually easy enough where non-mechanical toys are concerned. A pedal car, or tricycle, is different. You simply must have the correct metal parts. Wood, in any shape or form, is no substitute. There is not the same strength, nor the endurance. Things have to be bulky and unwork-

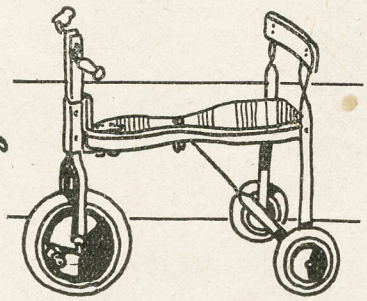


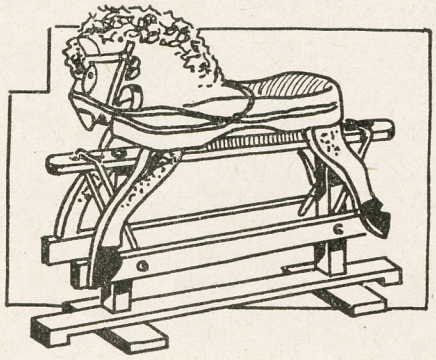
manlike, with many screws and bolts. Consequently, it would be better to purchase a toy car or tricycle rather than attempt to make one or the other.

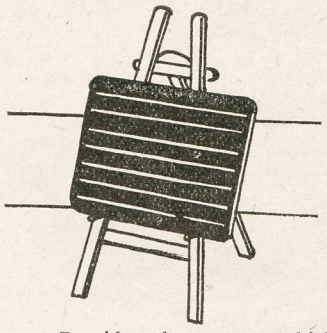
### Pedal Car Chassis

In pre-war times, of course, it was possible to buy a pedal car chassis, complete with wheels, steering, and all working parts. All one had to do was to build a suitable wooden body for the chassis. The latter simply bolted to the body. In this case, the construction was greatly simplified, and the car could be built much cheaper than the all-steel models displayed in shop windows.

The chassis was the main item required. It remains the main part of a toy car. It can, however, be omitted. Build the usual body from ¼in. wood; for example, with card, lino, as a substitute for plywood. The latter is needed for bending the radiator top







shape. Provide axle supports, which are bent from flat bar and screwed beneath the car body. Fit 8in. disc wheels.

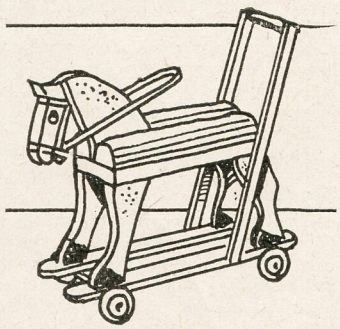
There is no steering. The wheels are a fixture, but free to turn round. You are building, in fact, a large model of an ordinary tin toy car. It will give as much pleasure as the more realistic type. There is nothing you can do, unless you can undertake the construction of a proper pedal car chassis, which means that you will have to be a mechanic, and know exactly what is required.

### A Pedal Tricycle

The usual toy tricycles, as illustrated, also seem easy to make. The real trouble is the "fixed" front wheel. It must be strongly attached to a cranked axle. Then you must not forget to include two fork pieces for connection to the steering column.

If the bends in the axle are not too sharp, the fork pieces (made from flat bar) can be slipped on once the axle has been brazed to the wheel hub. The cranked axle could be made from ⅜in. mild steel rod (solid stuff). Having slipped on the fork pieces, the pedals, shaped from a hardwood and bored, are fitted and held by means of washers and cotter pins. Holes for the latter will need to be drilled through the rod.

The seat, which is usually 11ins. high, should be shaped from 1½in. wood. It is about 16ins. long by 6ins.



wide at the rear end. The steering column could be made from wood (to which the fork pieces are bolted). The column is pivoted to the front end of the seat with a metal bracket which could engage with a second bracket on the seat.

The back rest is a piece of ½in. wood screwed to flat bar legs. An axle (solid metal rod) is fitted to the legs. The latter are supported by an under stay, made from flat bar. Note that the flat bar needs to be twisted. The large front wheel is 8ins. to 10ins. in diameter, and the rear wheels 6ins. to 4ins. in diameter. Disc wheels are advised.

### Safety Rocking Horse

A safety rocking horse is one, of course, that cannot rock over. These rocking horses have a height of 24ins. and a length of 33ins. overall. The horse may consist of a flat, thick body

piece to which ⅜in. thick legs are glued and screwed. The "hoofs" of the legs, at the inside, are half-checked for lapping to the rocker rails.

### The Head

The head of the horse should be cut from 1½in. or 1¼in. wood, with the edges scalloped at the eye and nostril positions, using a chisel, or a rasp and glasspaper. The head is fixed to the body, at the centre, by driving in screws via the underside. The body back requires to be upholstered in a simple way, then fluffy material glued to the head to act as a mane. Leatherette strapping and a few covered tacks are needed for the reins, etc.

Painting is, as usual, in bright colours. A flat coat of grey can be laid on first, and allowed to harden in thoroughly before the second coat is applied.

A wooden support is built on the lines shown, after which two rocking cranks, bent from ¼in. solid metal rod, are made and fitted. The cranks fit on the support, held in place by covering lugs bent from stout sheet metal, drilled for the suitable screws.

Another simple and popular toy is a horse on wheels, with a push handle. These usually have a padded leatherette seat. The common size is 20ins. long by 20ins. high. The construction of the horse is on similar lines as the rocking horse. In some cases it is usual to make a shallow box which, inverted, has a head attached to its bottom, with the legs attached at each corner, at the inside.

The base consists of two narrow bars of wood connected by two axle pieces. The horse is screwed to the bars, then the handle made and fitted. Small wheels, about 4ins. in diameter, are then attached, using roundhead screws and washers. Wooden wheels, turned from a hardwood, could be used, but the disc wheels are recommended.

### Kiddies' Runabout

A kiddie's runabout is another popular sort of gift. A usual design is shown, and it will be seen that the seat backing is bent to the shape of the seat. For this purpose, you will need a strip of short-grained plywood.

However, it is possible to have the seat made square. A runabout made this way only requires some pieces of ½in. wood. The cross pieces and foot blocks, however, should be made from ⅞in. wood. A small tray is provided, with a wire rod on which is arranged a few wooden balls. The latter need not be round. Squares of wood, with the corners removed, are just as good. The runabout is fitted with 2in. rubber-tyred wagon castors, of the push-in type.

### Blackboard and Easel

The easel is made from 1½in. by ½in. wood. It should have a height of 28ins. The board, made from ⅜in. wood, measures 16ins. by 12ins. Easel should be varnished. Board needs to be coated with dead black. No need for white lines which require to be painted on, using a white flat paint. Dead black is a special preparation for blackboards. It dries out flat, without shine. Blackboard black, as it is usually called, can be obtained at most leading paint shops.

# Some Replies of General Interest—

## Horn Work

*CAN you tell me the treatment of horn in turning and finishing as small ornaments, etc.? (D.G.—W.C.I).*

HORN can be worked and drilled by ordinary tools without particular difficulty. It can also be turned in the lathe, and moulded and flattened by heat. It can be cleaned by scrubbing with strong soda water and fastened together, either with small rivets or a powerful adhesive, like Chatterton's compound.

Polishing is brought about by first scraping with a steel scraper, then rubbing with brick dust and oil, and a final application of rouge or putty powder.

* * *

## Miniature Photographs

*I AM interested in the process of reducing photographs by the camera-copying method, so that the result can be used in rings, lockets, etc. Could you advise me on the process necessary to obtain these results, with regard to type of camera, lens, and method of illumination, etc.? (G.W.—Arington).*

NO special apparatus is essential for the photographic work you wish to undertake. All you require is any type of camera with a focussing screen—the older type of plate camera, such as the "Ruby" or "Thornton-Pickard".

The print or object to be copied is set up on an easel or other vertical support, and should be uniformly lighted.

The camera is set up in line with the object and the latter focussed on to the ground glass focussing screen of the camera. The camera is then moved away from, or towards, the object until the focussed image on the screen is the exact size required. A mask with a hole in it of the exact size of the ring, etc., is a convenience and can be placed over the focussing screen.

Having adjusted the camera and got the image as required, a photograph is taken in the usual way. This produces a negative from which a contact print is made.

* * *

## De-Magnetizing a Screwdriver

*COULD you inform me of a method, simple or otherwise, to de-magnetize a screwdriver? (T.P.H.—Walworth, S.E.).*

A SCREWDRIVER which has become impregnated with magnetism by contact with a powerful permanent magnet, such as a loud-speaker magnet, can be robbed of its magnetic force very easily, but the method is somewhat drastic.

Assuming the shank of an ordinary screwdriver is magnetic to some degree—the degree of being capable of holding small iron screws, etc., to its tip (which is often a nuisance rather than a benefit, at times), the remedy is to light a gas-ring and hold the shank of the screwdriver in the hot flame for a few seconds. When the metal is about to turn red, it is taken away and allowed to cool a moment before plunging in cold water. The best time to remove the metal is when it is turning a dark blue colour. By quenching, the temperature of the metal will not be rendered soft. The heat drives out the magnetism.

* * *

## Wood Worm

*I HAVE noticed signs of wood-worm appearing in the beading of a sideboard. Apart from removing the affected wood, is there anything I can apply to it to kill the worm, or prevent its spreading? (J.F.K.—Tottenham).*

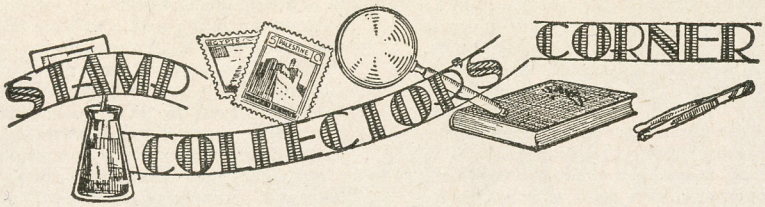
YOU will be well advised to watch for further signs of the wood-worm that you suggest is appearing in your sideboard. June and July are the months when they are most visibly active, and unfortunately there is no certain cure or preventive.

* * *

## Cassava

*BE good enough to let me know how to proceed to ferment cassava root. (F.C.—Ismalia).*

AS you do not state the purpose of fermenting cassava roots, we would point out that it might be possible to ferment the liquid in the root, but not the root itself. Possibly you refer to the sap of the bitter cassava roots, which contain the highly poisonous hydrocyanic acid. Exposing the roots to sustained heat, dissipates the poisonous principle, and when that has been achieved the concentrated juice is used for cassareep and other sauces.




# AIR MATTERS ON STAMPS

ONE section of stamp collecting that has become very popular during the last few years is that dealing with the air mail. This week we propose to talk about the early days of the air mail and describe some of the lesser-known points.

In Great Britain, the first Aerial Post was in 1911 when special post-cards and envelopes were prepared and flown from London to Windsor and also some from Windsor to London. This was done with the sanction of the Postmaster General.


**An official envelope on the South African Christmas flight**

A special postmark was made which consisted of two circles, and between the two were the words "First United Kingdom". Inside the circle was "Aerial Post", the date and either the word "London" or "Windsor". Unfortunately there is not one available for illustration.

After that air mail service there was quite a gap before any regular service began. Many experimental flights were made on which a few letters were carried. A number of routes were surveyed with a view to opening them up, and on these also letters were sometimes taken. But as the particular service was generally suspended shortly after, they cannot be called an air mail service.

## High Value

Some of these experimental letters now command quite high prices, and they are very interesting examples for an historical collection. However, one might say that for general purposes the Air Mail did not start until the Imperial Airways flights such as the London to Karachi service which started in 1929.

Then there was the special Christmas flight from London to Cape Town in 1931 and on that a letter posted in London on December 9th was delivered in Cape Town on the 21st. A specimen of the official envelope is illustrated here.

Other similar flights and extensions of flights have had their special envelopes. For example the London to Rangoon flight had an envelope showing a map of the route Karachi—Delhi — Calcutta — Akyab — Rangoon. The joint operation of the Imperial Airways and Qantas Empire Airways for the England to Australia service has a map of Australia with a kangaroo and speed bird.


**For British Stamps**

Quite a large number of countries have special stamps for air mail purposes and no doubt you have specimens of some to which you can refer.

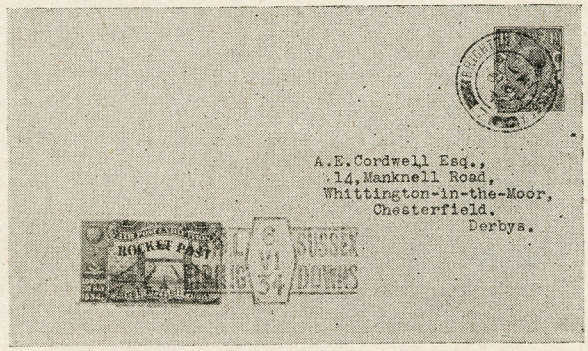
Great Britain has never issued such stamps, although an attempt was made to introduce them. At least at the International Stamp Exhibition held in London in May 1923 an essay (that is a suggested design) for an airmail stamp was printed and sold to the visitors to this Exhibition. A specimen is shown as the second illustration.

In 1934 a scheme for sending letters by rocket was tried out on the Sussex Downs. Letters which were sent had to have the ordinary postage stamps affixed as well as the Rocket-Post stamp which cost 2/6. The next illustration is one of these flown or rocketed covers. The reason for the 1½d stamp is that the letter after going in the rocket was sent on to the addressee by the ordinary overland mail.

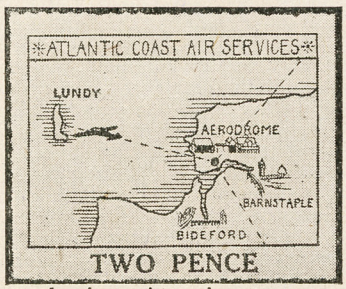
## Rocket Troubles

The trouble with this form of very rapid mail transport is the difficulty of making sure that the charge in the rocket is sufficient to carry the projectile so far and no further. And as the temperature of the air, the barometric pressure and so on all affect the rocket each day the charge would differ for a given distance.

Lastly, we record one of the private airmail services, that to Lundy Island.




**Specimen of an envelope sent by experimental rocket post**




**A private air service stamp**

This was started in 1935 by the Atlantic Coast Air Services. They issued special stamps showing a map of the area served, but later the company changed its name and issued a fresh series of stamps. This time showing a picture of a lighthouse with the words "Lundy and Atlantic Coasts Air Lines Ltd.", around the edge of the stamp. This service had to stop when the war broke out in 1939.

That gives a very short idea of the difficulty of making a complete Air postal history collection, because there are so many items which have to be found. This, however, should in no way discourage any one from trying to make such a collection. Just the reverse in fact, because you may always find an item which would interest those who think they have a practically complete collection.

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